

Claims 84-93 stand rejected under 35 USC Sections 102(b) as anticipated or 103(a) as obvious over Applicants' Admitted Prior Art (AAPA) on pages 1-7 of the specification, e.g., US 4,799,939 (Bloecher) and US 4,541,842 (Rostoker).

Claims 84-93 stand rejected under the judicially created doctrine of obviousness-type double patenting over claims 14-39 of US Pat. No. 6,797,023.

Applicants respectfully traverse these rejections.

Applicants note, with appreciation that claims 70-83 would be allowable if amended to overcome the Section 112, second paragraph, rejection.

Remarks

Amendments

Applicants have amended the specification and the claims in response to the objections and the Section 112, second paragraph, rejections, respectively.

Amendments to the specification and a clean copy of amended page 1 of the specification may be found in Appendix A annexed hereto.

Amendments to the claims may be found in Appendix B annexed hereto.

Section 112 Rejections

The antecedent basis errors noted by the Examiner in claims 70, 84, 91 and 93 have been corrected and the corrections marked on a copy of the claims in Appendix B. In particular, the phrase "...the grain..." in claim 70(a) has been replaced with "...abrasive grain..."; the phrase "...a plurality of grains..." in claims 70(d) and 84(d) has been replaced with "...a plurality of the grains..."; and the words "an initial" have been deleted from claims 70(e) and 84(e) and replaced by the article "a". In claim 91 "agglomerate" has been substituted for "granule" and in claim 93, the phrase "...an apparent.." has been substituted for "...the apparent...".

As for the definition and meaning of the density parameters recited in claim 93, the term "apparent volume" has been defined at page 14, lines 20-25, of the specification. The term "relative density" has been defined at page 14, lines 4-27 of the specification. The relationship among the density parameters has been explained in the same section of text on page 14.

With these amendments and clarifications, the application satisfies all requirements of Section 112, second paragraph.

Section 102(b) or Section 103(a) Rejection

In the rejection of product-by-process claims 84-93, the Examiner cites Applicants description of the prior art on pages 1-7 of the specification and particularly notes two patents, the Bloecker patent and the Rostoker patent. The Examiner argues that this "AAPA" anticipates or renders obvious Applicants' product-by-process agglomerates because claims to such agglomerates are not limited to the process steps, only to the structure implied by the steps. From the AAPA the Examiner concludes that the agglomerates of the prior art would meet all of the structural limitations of the claimed agglomerates.

However, the Examiner has failed to point out a particular disclosure of "...sintered agglomerates [that] have a three-dimensional shape, a loose packing density of ≤ 1.6 g/cc and contain a plurality of abrasive grains...." (claim 84) or agglomerates that "...comprises about 30-88 volume % porosity..." (claim 91) or "...wherein up to 75 volume % of the porosity comprises interconnected porosity..." (claim 92) or "...wherein the relative density of the agglomerates, as measured by a fluid displacement volume technique and expressed as a ratio of the volume of the agglomerates to the apparent volume of the abrasive grain and the binder material used to make the agglomerates, is a maximum of 0.7." (claim 93). Thus, a novelty rejection is inappropriate.

As for an obviousness rejection, Bloecker only works with organic bonded abrasive grain and filler, and Rostoker works only with cellular glass (closed cell) bonded abrasive grain, instead of the broad range of high and low temperature binders recited in claim 86. Bloecker uses closed cell filler materials, thus creating a structure

that is not permeable to flow. Bloecher uses a slurry method of preparation, followed by thermal treatment and crushing in a process that would not be predicted to yield open, porous, three dimensional agglomerates as specified in Applicants' claims. The pellet process of Rostoker likewise would not be predicted to yield the claimed agglomerates.

Neither the referenced art, nor any AAPA, teaches the use of a rotary calciner to agglomerate loose grains with binder. Applicants have observed unique capabilities of the rotary calciner to make relatively uniform agglomerated three-dimensional structures with a wide range of binder materials, fillers and grains, with low losses due to re-work from crushing and the like, while consistently creating open, porous three-dimensional structures not possible to achieve with prior art agglomeration techniques.

Thus, based upon the evidence of record herein, Applicants disagree with the Examiner's conclusion that the agglomerates of the prior art would meet all of the structural limitations of the claimed agglomerates, and disagree that the claims are obvious or anticipated by any prior art.

Double Patenting Rejection

35 USC Section 121 and MPEP Rule 804.01 prohibit the use of a patent issued on an application with respect to which a requirement for restriction has been made, or on an application filed as a result of such a requirement, as a reference against any divisional application, if the divisional application is filed before the issuance of the patent.

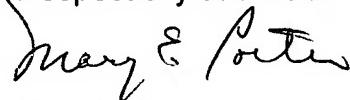
Claims 70-83 herein have been subjected to a double patenting rejection over claims 14-39 of the concurrently pending, commonly owned, parent patent grant, US 6,797,023. Claims 14-39 were part of a set of claims elected for examination in the parent application, and claims 70-83 were part of a set of withdrawn, non-elected claims, following a restriction requirement in the parent application that was imposed by the Examiner pursuant to 35 USC Section 121. A copy of the office action containing the restriction requirement is annexed hereto as Appendix C for ease of reference.

Thus, the double patenting rejection is improper and Applicants respectfully request that it be withdrawn.

Conclusions

Applicants respectfully request entry of these amendments and allowance of all claims pending in this divisional application.

Respectfully submitted



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